

AMENDMENTS TO THE CLAIMS

1. (Previously Amended) A system for fluid isolation in a biological mass having at least one upstream channel and at least one downstream channel, comprising:

a delivery conduit for administering a fluid to the biological mass, the delivery conduit positioned adjacent to or into at least one of the upstream channels of the biological mass; and

a collection conduit for acquiring the administered fluid, the collection conduit positioned adjacent to or into at least one of the downstream channels of the biological mass and having a collection seal for occluding external fluid flow by the collection seal;

wherein the biological mass is selected from the group consisting of a heart, a portion of a heart, a kidney, a portion of a kidney, a stomach, a liver, and a brain.

2. (Original) The system of claim 1, further including a driving force in communication with the delivery conduit for encouraging fluid through the delivery conduit.

3. (Original) The system of claim 1, wherein the delivery conduit is for administering fluid during at least a substantial period of diastole.

4. (Original) The system of claim 1, wherein the delivery conduit is for administering fluid during the period of diastole and the period of systole.

5. (Original) The system of claim 1 wherein the delivery conduit further includes a delivery seal for occluding external fluid flow.

6. (Original) The system of claim 5 wherein the delivery seal is an elastomeric balloon.

7. (Original) The system of claim 6, wherein the delivery seal is contractible to allow external fluid flow to resume.

8. (Original) The system of claim 7, further including a seal control mechanism for contracting and expanding the delivery seal.

9. (Original) The system of claim 8, wherein the seal control mechanism is configured to expand the delivery seal during at least a substantial period of diastole and contract the delivery seal during at least a substantial period of systole.

10. (Original) The system of claim 1, wherein the biological mass is a human heart.

11. (Original) The system of claim 1, wherein the delivery conduit is positioned into the aorta and the collection conduit is positioned into the coronary sinus.

12. (Original) The system of claim 1, wherein the fluid includes an agent.

13. (Original) The system of claim 12, wherein the agent is selected from the group consisting of natural and synthetic drugs, growth factors, gene therapy compositions, chemotherapeutic chemicals, anti-bacterial chemicals, anti-angiogenic chemicals and any combination thereof.

14. (Withdrawn) The system of claim 1, further including a second delivery conduit for administering fluid to the biological mass, wherein the second delivery conduit is positioned in another of the upstream channels.

15. (Withdrawn) The system of claim 14, wherein one delivery catheter is positioned in the left main coronary artery and the second delivery conduit is positioned in the right coronary artery.

16. (Withdrawn) A system for fluid isolation in a biological mass having at least one upstream channel and at least one downstream channel, comprising:

a first delivery conduit for administering fluid to the biological mass and positioned adjacent to or into one of the upstream channels and a second delivery conduit for administering fluid to the biological mass and positioned adjacent to or into another of the upstream channels and

a collection conduit for acquiring the fluid, the collection conduit positioned adjacent to or into one of the downstream channel and having a collection seal for occluding external fluid flow.

17. (Withdrawn) The system of claim 16, wherein one delivery catheter is positioned in the left main coronary artery and the second delivery conduit is positioned in the right coronary artery.

18. (Withdrawn) The system of claim 16 wherein the each of the delivery conduits further include a delivery seal for occluding external fluid flow.

19. (Withdrawn) The system of claim 18 wherein the delivery seals are an elastomeric balloon.

20. (Withdrawn) The system of claim 19, wherein the delivery seals are contractile to allow external fluid flow to resume.

21. (Withdrawn) The system of claim 20, further including a seal control mechanism for contracting and expanding the delivery seals.

22. (Withdrawn) The system of claim 21, wherein the seal control mechanism is configured to expand the delivery seals during at least a substantial period of diastole and contract the delivery seals during at least a substantial period of systole.

23. (Withdrawn) A method of delivering and isolating fluid in a biological mass having at least one upstream channel and at least one downstream channel, comprising the steps of:

inserting a delivery conduit adjacent to or into one of the upstream channels;

inserting a collection conduit adjacent to or into one of the downstream channels, the collection conduit having an external collection seal;

activating the collection seal to occlude fluid flow outside of the collection conduit;

administering fluid through the delivery conduit to the upstream channel; and

allowing the fluid to flow into the downstream channel and into the collection conduit.

24. (Withdrawn) The method of claim 23, wherein the biological mass is the heart.
25. (Withdrawn) The method of claim 24, wherein the delivery conduit is inserted into the aorta and the collection conduit is inserted into the coronary sinus.
26. (Withdrawn) The method of claim 23, wherein the delivery conduit has a delivery seal and the steps further include of expanding the delivery seal during at least a substantial period of diastole and contracting the delivery seal during at least a substantial period of systole.
27. (Withdrawn) The method of claim 23, wherein the administering of fluid is during at least a substantial period of diastole.
28. (Withdrawn) The method of claim 23, wherein the fluid includes an agent.
29. (Withdrawn) The method of claim 28, wherein the agent is selected from the group consisting of natural and synthetic drugs, growth factors, gene therapy compositions, chemotherapeutic chemicals, anti-bacterial chemicals, and any combination thereof.
30. (Withdrawn) The method of claim 23, further including the step of applying a drainage force to the collection conduit for drawing fluid into the collection conduit
31. (Withdrawn) The method of claim 23, further including the step of inserting a second delivery conduit adjacent to or into a second upstream channel of the biological mass and administering fluid through the second delivery conduit to the second upstream channel.
32. (Withdrawn) The method of claim 31, wherein the administering of fluid to the first delivery conduit and second delivery conduit is during the period of diastole and the period of systole.

33. (Withdrawn) A method of delivering and isolating fluid in a biological mass, comprising the steps of:

inserting a first delivery conduit adjacent to or into a first upstream channel of the biological mass and a second delivery conduit adjacent to or into a second upstream channel of the biological mass;

inserting a collection conduit adjacent to or into a downstream channel of the biological mass, the collection conduit having an external collection seal;

activating the external collection seal to occlude fluid flow outside of the collection conduit;

administering fluid through the first delivery conduit to the first upstream channel and through the second delivery conduit to the second upstream channel; and

allowing the fluid to flow into the downstream channel and into the collection conduit.

34. (Withdrawn) The method of claim 33, wherein the biological mass is the heart.

35. (Withdrawn) The method of claim 34, wherein the first delivery conduit is inserted in the left main coronary artery, the second delivery conduit is positioned in the right coronary artery and the collection conduit is inserted in the coronary sinus.

36. (Withdrawn) The method of claim 33, further including the step of applying a drainage force to the collection conduit for drawing fluid into the collection conduit

37. (Withdrawn) The method of claim 33, wherein the each of the delivery conduits have a delivery seal and the steps further include of expanding the delivery seals during at least a substantial period of diastole and contracting the delivery seals during at least a substantial period of systole.

38. (Withdrawn) A system for use in a method according to claim 23, comprising:
a fluid for flowing through an upstream channel and downstream channel of a biological mass;
a delivery conduit for administering the fluid to the upstream channel; and

a collection conduit for acquiring the fluid from the downstream channel, the collection conduit having a collection seal for occluding external fluid flow.

39. (Withdrawn) The system of claim 38, wherein the fluid includes an agent.
40. (Withdrawn) The system of claim 39, wherein the agent is selected from the group consisting of natural and synthetic drugs, growth factors, gene therapy compositions, chemotherapeutic chemicals, anti-bacterial chemicals, and any combination thereof.
41. (Withdrawn) The system of claim 38, further including a drainage force mechanism in communication with the collection conduit for drawing fluid into the collection conduit.
42. (Withdrawn) A system for use in a method according to claim 33, comprising:
 - a fluid for flowing through at least two upstream channels and at least one downstream channel of a biological mass;
 - a first delivery conduit for administering the fluid to a first upstream channel;
 - a second delivery conduit for administering the fluid to a second upstream channel; and
 - a collection conduit for acquiring the fluid from the downstream channel, the collection conduit having a collection seal for occluding external fluid flow.
43. (Withdrawn) The system of claim 42, wherein the fluid includes an agent.
44. (Withdrawn) The system of claim 43, wherein the agent is selected from the group consisting of natural and synthetic drugs, growth factors, gene therapy compositions, chemotherapeutic chemicals, anti-bacterial chemicals, and any combination thereof.
45. (Withdrawn) The system of claim 42, wherein the delivery catheter includes a delivery seal for occluding external fluid flow.
46. (Withdrawn) The system of claim 45, further including a seal control mechanism for contracting and expanding the delivery seal.

47. (Withdrawn) A system for use in a method according to claim 23, comprising:
an agent for combination with a fluid and for travel through an upstream channel and downstream channel of a biological mass;
a delivery conduit for administering the fluid to the upstream channel; and
a collection conduit for acquiring the fluid from the downstream channel, the collection conduit having a collection seal for occluding external fluid flow.

48. (Currently Amended) A system comprising:
a delivery conduit having a dimension suitable to be positioned adjacent to or into an upstream channel of a biological mass selected from the group consisting of a heart, a portion of a heart, a kidney, a portion of a kidney, a stomach, a liver, and a brain, and where the biological mass comprises at least one upstream channel and at least one downstream channel;
a separate collection conduit having a dimension suitable to be positioned adjacent to or into a downstream channel of the biological mass, the separate collection conduit comprising a collection seal for occluding external fluid flow by the collection seal; and
a fluid to be administered to the biological mass through the delivery conduit, and reclaimed by the collection conduit, wherein the system achieves fluid isolation in the biological mass, where the biological mass between the upstream channel and the downstream channel has at least one upstream channel and at least one downstream channel;
wherein the biological mass is selected from the group consisting of a heart, a portion of a heart, a kidney, a portion of a kidney, a stomach, a liver, and a brain.

49. (Previously Added) The system of claim 48, wherein the fluid further comprises an agent.

50. (Previously Added) The system of claim 49, wherein the agent is selected from the group consisting of natural and synthetic drugs, growth factors, gene therapy compositions, chemotherapeutic chemicals, anti-bacterial chemicals, anti-angiogenic chemicals, and combinations thereof.

51. (Previously Added) The system of claim 48, wherein the delivery conduit further comprises a delivery seal for occluding external fluid flow.

52. (Previously Added) The system of claim 51, wherein the delivery seal comprises an elastomeric balloon.

53. (Previously Added) The system of claim 48, further comprising a pressure device, wherein the pressure device is in fluid communication with the delivery conduit.

54. (Previously Added) The system of claim 53, wherein the pressure device exerts a positive pressure, and the pressure device is selected from the group consisting of positive displacement pumps, syringes, vacuum pumps, delivery pumps, suction pumps, metering pumps, and intra-aortic balloon pumps.

55. (Previously Added) The system of claim 48, further comprising a pressure device in fluid communication with the collection conduit.

56. (Previously Added) The system of claim 55, wherein the pressure device exerts a negative pressure, and the pressure device is selected from the group consisting of positive displacement pumps, syringes, vacuum pumps, delivery pumps, suction pumps, metering pumps, and intra-aortic balloon pumps.

57. (Previously Added) The system of claim 48, wherein the delivery conduit comprises a delivery catheter, wherein the delivery catheter includes three internal lumens.

58. (Previously Added) The system of claim 48, wherein the delivery conduit comprises a delivery catheter, wherein the delivery catheter comprises as separate lumens, a balloon inflation lumen, a guidewire lumen, and a drug delivery lumen.

59. (Previously Added) The system of claim 48, wherein the separate collection conduit comprises a collection catheter, wherein the collection catheter comprises three lumens.

60. (Previously Added) The system of claim 48, wherein the separate collection conduit comprises a collection catheter, wherein the collection catheter comprises as separate lumens, a drainage lumen, a guidewire lumen, and a balloon inflation lumen.